1: Metraux E-5 (1934-1935) 1940
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always found. I noticed on a few rocks near ancient settlements small rectangular depressions artificially carved. The natives explained them as tanks to collect rain water.

The water of the crater lakes (*rano*) has always been an inexhaustible reservoir but it is apparently too inaccessible to have been much used. Some early travelers report that the natives chewed sweet potatoes and sugar cane to quench their thirst when walking.

Today abundant water from the corrugated iron roofs is collected in tanks or barrels.

PLANT LIFE

Skottsberg (208, vol. 2, p. 489) writes that "there does not exist another island of the size of Easter and with such a fine climate where the native flora is so poor. Only about 30 species are considered to be indigenous." Despite the introduction of many new plants and trees, grass is still the only vegetation on most of the island. Only the crater of Rano-kao with its green belt and the farm of Mataveri are exceptions. The general appearance of the island has not changed much since its discovery; then shrubs, principally of *toro-miro*, sandalwood, *Triumfetta semitriloba*, and *Sapindus*, were seen in many places along the coast and were, perhaps, even more abundant in the interior. It is possible that when the first settlers landed on the island they found a kind of savanna forest "a park-like formation with scattered, stunted *Sophora* trees and grass cover" (208, vol. 2, p. 492). The flat, rocky plains were probably devoid of trees and the savanna confined to the hillsides.

The almost entire absence of trees impressed the ancient travelers more than any other feature. Aridity is still invoked as one of the most decisive arguments in support of the theory of some vast cataclysm which completely changed conditions on the island and reduced its inhabitants to utmost misery after a time of plenty during which their culture developed. Early voyagers, landing at various parts of the island and making hasty generalizations, differ greatly in descriptions of the fertility of the land. Roggeveen holds in high esteem its ability to be cultivated (186, pp. 9-10, 21):

> The reason why, at first, when at a farther distance off, we regarded the said Easter Island as being of sandy nature is that we mistook the parched up grass, and hay or other scorched and charred brushwood for a soil of that aride nature, because from its outward appearance it suggested no other idea than that of an extraordinarily sparse and meagre vegetation; and the discoverers had consequently bestowed upon it the term sandy.
>
> . . . Nor can the aforementioned land be termed sandy, because we found it not only not sandy but on the contrary exceedingly fruitful, producing bananas, potatoes, sugarcane of remarkable thickness, and many other kinds of the fruits of the earth, although destitute of large trees and domestic animals, except poultry. This place, as far as its rich soil and good climate are concerned, is such that it might be made into an earthly Paradise, if it were properly worked and cultivated; which is now only done in so far as the Inhabitants are obliged to for the maintenance of life.

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244 high stem when it extends and begins to produce tubers. Old tubers, no longer edible, are called *heipara*. Natives often gather (*tua*) sweet potatoes from old, abandoned fields.

244 192 The appearance of the plant, especially of its leaves, distinguishes for the natives the forms to which they give different names. Knoche (123, p. 134) collected in 1912 more than 25 names for kinds of sweet potato, and he believes that formerly the natives had a more extensive classification. My more recent list of names is little shorter than his. Taste plays an insignificant part in the classifications, whereas external and trifling characteristics are important. Often the distinguishing traits disappear entirely when the leaves are dry. Sweet potato names obtained either from informants or from literature are:

Kumara ure-omo, kumara-uriuri (black), *kumara-uka-tuc, chiva* (white), *aropiro* (yellow), *renga-moe-tahi-teatea, renga-moe-tahi-uriuri, okeoke* (slightly red), *paka-taero* (violet or black), *tipa-tai-paka* (white), *apuka* (white), *pita* (white), *mari-mamu* (like white of egg), *mari-kia-kia* (long form), *tuitui-ko-tiro, rau-miro* (black), *epunua* (black), *makuto, kava-tangueti* (white), *kava-aka-iroiro* (white), *ure-vai, apuka-eu* (white), *mine* (white), *tua-tea* (white), *puku*. All these names refer to shape and color of the tubers, not to the leaves. The most prized sweet potato, *tua-tea*, is believed to have disappeared from the island with the passing of the kings.

●271 Several travelers have stated that the natives ate raw sweet potatoes to quench their thirst. Thomson (215, p. 456) expressly declares that "they ate them both raw and cooked." With their abundant supply of rain water, collected from the zinc roofs, modern natives never need to wet their mouths with the scanty juice of the *kumara*.

Taro

244 262 Taro (*Colocasia antiquorum* var. *esculenta*) is much less important as food than sweet potatoes. Forster (83, vol. 1, p. 587) says that during his trip across the island he passed "through a number of plantations of bananas, potatoes and yams, and one of the eddoes." Cook (53, vol. 1, p. 288) mentions the "tara or eddy root" after the sweet potatoes and yams. It is possible that the white roots mentioned by Behrens (18, vol. 1, p. 130) were taro. Gonzalez (190, p. 101) most certainly alludes to the taro when he writes of "yucca".

244 Before centralizing in Hanga-roa, the Easter Islanders cultivated taro in enclosures where some tubers still grow. Today the most valued ground for taro cultivation is that covered with stones. Near Hanga-roa I saw taro plants growing in such a depth of small volcanic stones that not the slightest trace of earth could be seen. The layer of stones retains some humidity and protects the young plants from the direct rays of the sun. The natives say that the stones cause the taro to "suffer" (*hakamamae*), thereby making it grow better. Like the sweet potato, taro has many forms or types, and their classifi-

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contained a very sweet juice which the inhabitants presented to us very frequently, and particularly whenever we asked for something to drink." Only fifty years ago the natives quenched their thirst during their journeys with sugar cane. Even more recently uncultivated sugar cane has been found on several parts of the island. The juice was used as an ointment or as an adhesive upon which pigments were stuck in face painting, and the leaves served as hut coverings. Sugar cane was consumed in great quantities during the feasts. The name for a fragment of sugar cane planted in the soil is *pupura*.

Bananas

All early travelers (186, p. 13; 90, p. 101; 53, vol. 1, p. 288) mention bananas, *maika* (*Musa sapientum*), as products offered by the islanders for trade. They were extensively cultivated, for some Spaniards under Gonzalez (90, p. 123) visited a plantation near Vinapu "which stretched about a quarter of a league in extent, and was about half that distance in breadth." Lisiansky (143, p. 86) noticed that "every house was planted round with bananas and sugar cane."

The trees in these plantations were disposed "in the order called quincunx" (130, vol. 2, p. 259) and "planted in straight lines by the cord" (130, vol. 1, p. 76). According to G. Forster (83, vol. 1, p. 571), who went through some plantations near the present Hanga-roa, "the bananas were all growing in holes one foot deep, which were supposed to be contrived for collecting rain, and preserving it for a longer time about the plant." A century later, Thomson (215, p. 456) states that "bananas are grown in holes a foot or more deep and with sloping sides, designed to catch and hold the rain water as long as possible about the roots of the plant." Whenever it was possible natural cavities were utilized, in which decayed branches and leaves made a thick layer of fertile humus. The richest banana plantations of today are located on the west coast near the leper house and the ancient village of Ana-o-hoka, between ahu Akapu and Ahu-te-peu. There, in some places the lava crust which covered enormous subterranean cavities has sunk, forming holes about 10 to 15 feet deep. Trees planted there in former days thrived on a rich, damp soil, protected from the sea winds.

At present the natives count ten varieties of bananas, some of which have recently come from Tahiti: *maika-pukapuka*, *maika-korotea*, *maika-hihi*, *maika-pia*, *maika-naho-a*, *maika-pahu* (today extinct), *maika-puru-ino*, *maika-rio*, *maika-perora*, *maika-hiva* (a foreign variety), and *maika-tamoa* (introduced from Samoa). The fruit is still an important staple food of the Easter Islanders. In the past it must have been even more important. The shoots of banana used for planting were called *huri*.

Dried banana leaves (*kaka*) were once used as house coverings and the

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out further preparation, the animal was put into the oven (81, vol. 38, p. 131). Chickens were cooked by putting hot stones inside the body; they were never plucked beforehand (90, p. 46).

According to a tradition noted by Knoche (123, p. 182), for which I found no evidence, fish were boiled in the natural holes so commonly found on rocks. Raw fish is not eaten by modern natives, but a tradition points out that they used to do so a few generations ago.

Water, for washing new-born babies or sick people, is heated by throwing (*tunu maea vera*) glowing stones into a big calabash (*kaha*) full of water.

Sweet potatoes were generally baked in earth ovens. My informant told me that by means of hot stones they were sometimes boiled in big calabashes. Today sweet potatoes are prepared in many ways, but they are still greatly appreciated when cooked underground.

Taro is cooked in the earth oven, fried, or boiled. Taro leaves (*raupa taro*), which are also cooked in the earth oven, constitute one of the most delicious foods of Easter Island.

Ti roots are no longer eaten but in former times they were cooked (86, p. 25);

> . . . The natives put them into a hole, wrapped with leaves and covered them with grass and hot stones. When the stones were getting cold, they were replaced by others, and so on during two or three days. The recompense of all that work is the facility to keep that fruit and its delicious flavor.

Tepano described the preparation of ti in almost the same terms, but he assured me that during the three to five days the food remained in the earth it was necessary to light a fire above the oven. Because of the present abundance of sugar, the ti is no longer a delicacy.

Bananas were ripened quickly for festivals by warming them in a long ditch. A fire was lighted in the ditch, similar to that kindled in ordinary oven cooking. A layer of fresh earth was spread to extinguish the flames, the walls of the ditch were lined with fresh banana leaves (*rito*) and the bananas deposited in the ditch were covered with earth. Three or four days later the fruits were ripe.

In former times arrowroot was eaten after it had been baked either upon or in the earth oven. It is no longer grown on the island.

Little salt, if any, was used to flavor the food, and even today the natives do without it. It has been noted that they do not need salt, since they drink brackish water and absorb air impregnated with sea salt.

Seabirds' eggs were once consumed in great quantities and the natives are still very fond of them. The few islanders that accompanied us on the expedition to Motu-nui ate more than a hundred eggs within half an hour.

Nowadays cooking is generally Chilean and maize is an important food in the diet.

10: Cooke D-5 (1886) 1899
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342 natives built many of these huts, the cairns for the dead, and other buildings, of these lava blocks, loosely piled up, and Messrs. Salmon and Brander apply them to good use in constructing their extensive corrals and fences, with the added advantage of thus clearing the soil for planting, wherever desirable.

137 A coarse hummock grass and a variety of finer quality grow profusely over nearly the entire island, sprouting vigorously among the lava fragments, and affording abundant pasturage for the herds of cattle, horses, and sheep, the former numbering 600 and the latter 18,000 at the time of our visit, and both multiplying rapidly.

134 On the northeastern end of the island, and on the slopes of Mount Pun-ko-taki, the surface is covered with fine, red, volcanic sand and dust, which is kept in constant motion by the winds, and is barren of vegetation of any kind.

132 At the time of our visit, December, which is during their dry or summer season, extending from October to April, the periods of the
312 southeast trades, there were no running streams on the island, nor, with the exception of the valley at the base of Rana Kao, were there any evidences of the former existence of such visible. Fresh water away from the habitations was exceedingly scarce and difficult to obtain, although showers of rain at night were not infrequent.

312 The alleged springs or wells, including *I'una I'ua*, the "Unfailing Spring," so highly spoken of by former visitors, were at long distances apart, were merely shallow excavations among the bowlders into which the surface water percolated, and were covered to protect them from the animals. The water contained in them was rarely of more than a few bucketsful in quantity, and with a single exception, at Camp Whitney, of bad quality. That contained in the lakes inside the two craters, the accumulations of the rainy seasons, and surface drainage also, was fully as bad, and impregnated both with vegetable and animal matter, the former from the dense growth on the surface, the latter from the herds of cattle which came to the lakes to drink.

271 It may be mentioned in this place that the natives, from long habit, no doubt, have become accustomed to drink but sparingly. We were surprised, during our expedition around the island, to notice how rarely they resorted to the canteen, with which all were provided, and they, no doubt, were equally amazed at our constant demand for water, made necessary to replace the loss from perspiration, induced by violent exercise and the sun's heat. They were always careful to locate our camp near, and anxious to keep us well supplied with, as good water as was to be had, and when we broke camp in the morning the "springs" in the vicinity were usually drained dry.

312 It was at first a mystery to us whence the animals obtained their supplies, but as to the cattle, they never wandered far away from the craters, in whose lakes they could, at all seasons, quench their thirst. In so far as the sheep were concerned, whose needs in this respect are